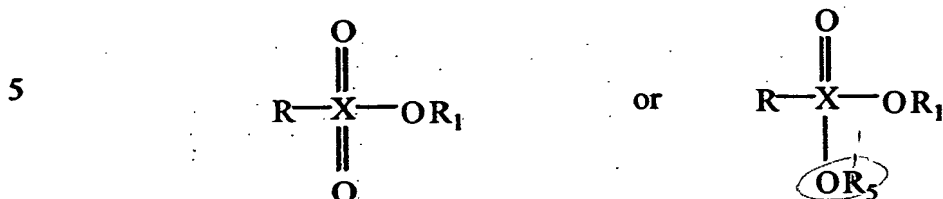


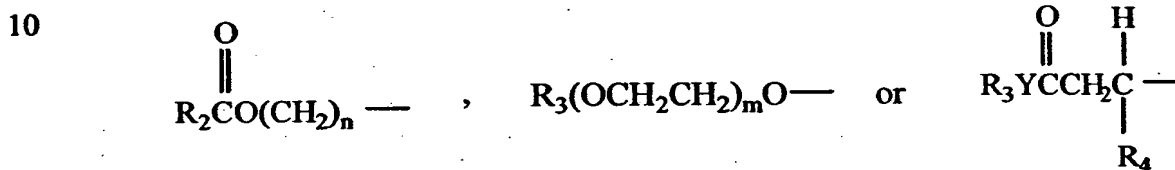
## Claims:

- Rule 1.126  
1. An oral contraceptive composition comprising a compound of the formula:

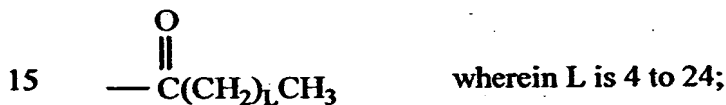


wherein X is P or S;

R is C<sub>4</sub>-C<sub>24</sub> alkyl, C<sub>4</sub>-C<sub>24</sub> alkenyl, C<sub>4</sub>-C<sub>24</sub> alkoxy,



R<sub>1</sub> is H, C<sub>1</sub>-C<sub>4</sub> alkyl, a pharmaceutically acceptable cation or



R<sub>5</sub> is H, C<sub>1</sub>-C<sub>4</sub> alkyl, phenyl or a pharmaceutically acceptable cation,

R<sub>2</sub> is C<sub>4</sub>-C<sub>24</sub> alkyl or C<sub>4</sub>-C<sub>24</sub> alkoxy, n is 0 to 4;

R<sub>3</sub> is C<sub>4</sub>-C<sub>24</sub> alkyl, m is 3 to 10;

R<sub>4</sub> is H, C<sub>1</sub>-C<sub>4</sub> alkyl or COOR<sub>6</sub>;

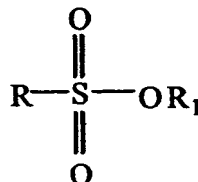
20 R<sub>6</sub> is H or C<sub>1</sub>-C<sub>13</sub> alkyl; and

Y = O or NH and a pharmaceutically acceptable carrier suitable for oral delivery.

2. The composition of claim 1 wherein the composition is formulated as  
25 tablet or capsule.

3. The composition of claim 1 wherein the composition is formulated as a gelcap or suspension.

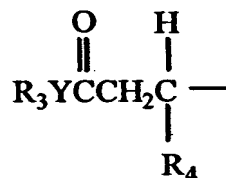
4. The composition of claim 1 wherein the compound has the general  
5 formula



wherein R is C<sub>4</sub>-C<sub>24</sub> alkyl, C<sub>4</sub>-C<sub>24</sub> alkoxy, or

10

and Y is O.



5. The composition of claim 4 wherein

R is C<sub>10</sub>-C<sub>18</sub> alkyl;

15

R<sub>1</sub> is a pharmaceutically acceptable cation or



and L is 20.

6. The composition of claim 4 wherein R is

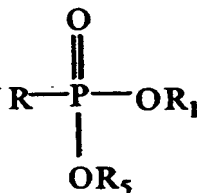
20



R<sub>3</sub> is C<sub>4</sub>-C<sub>24</sub> alkyl; and

R<sub>1</sub> is a pharmaceutically acceptable cation.

7. The composition of claim 1 wherein the compound has the general  
25 formula



wherein R is C<sub>4</sub>-C<sub>24</sub> alkyl or C<sub>4</sub>-C<sub>24</sub> alkoxy; and

R<sub>1</sub> and R<sub>5</sub> are independently H or a pharmaceutically acceptable cation.

8. The composition of claim 7 wherein

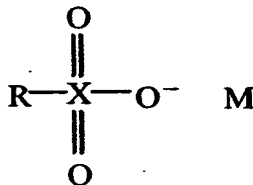
5 R is C<sub>4</sub>-C<sub>24</sub> alkoxy;

R<sub>1</sub> is H or a pharmaceutically acceptable cation; and

R<sub>5</sub> is H.

9. The contraceptive composition of claim 1 wherein the compound has

10 the general formula:



wherein X is P or S;

15 M is a cation; and

R is C<sub>4</sub>-C<sub>24</sub> alkyl, C<sub>4</sub>-C<sub>24</sub> alkenyl, C<sub>4</sub>-C<sub>24</sub> alkoxy,



or



20 wherein n = 2, 3 or 4;

R<sub>2</sub> = C<sub>9</sub>-C<sub>13</sub> alkyl; and

R<sub>3</sub> = C<sub>4</sub>-C<sub>24</sub> alkyl.

10. The composition of claim 9 wherein X is S.

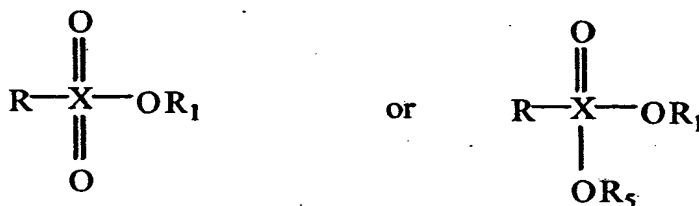
25

11. The composition of claim 9 wherein the composition is formulated as tablet or capsule.

12. The composition of claim 9 wherein the composition is formulated as a Gelcap or suspension.

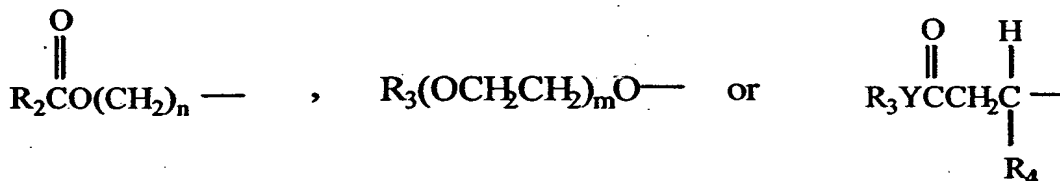
13. The composition of claim 10 wherein the cation is sodium.

14. A contraceptive transdermal patch or implant, wherein said patch or implant comprises a composition comprising a compound of the general formula:



wherein X is P or S;

R is C<sub>4</sub>-C<sub>24</sub> alkyl, C<sub>4</sub>-C<sub>24</sub> alkenyl, C<sub>4</sub>-C<sub>24</sub> alkoxy,



R<sub>1</sub> is H, C<sub>1</sub>-C<sub>4</sub> alkyl, a pharmaceutically acceptable cation

or



wherein L is 4 to 24;

R<sub>5</sub> is H, C<sub>1</sub>-C<sub>4</sub> alkyl, phenyl or a pharmaceutically acceptable cation,

R<sub>2</sub> is C<sub>4</sub>-C<sub>24</sub> alkyl or C<sub>4</sub>-C<sub>24</sub> alkoxy, n is 0 to 4;

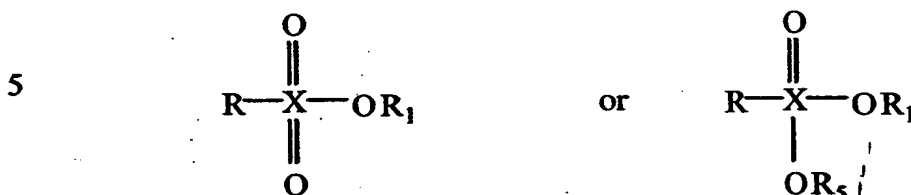
R<sub>3</sub> is C<sub>4</sub>-C<sub>24</sub> alkyl, m is 3 to 10;

R<sub>4</sub> is H, C<sub>1</sub>-C<sub>4</sub> alkyl or COOR<sub>6</sub>;

R<sub>6</sub> is C<sub>1</sub>-C<sub>13</sub> alkyl; and

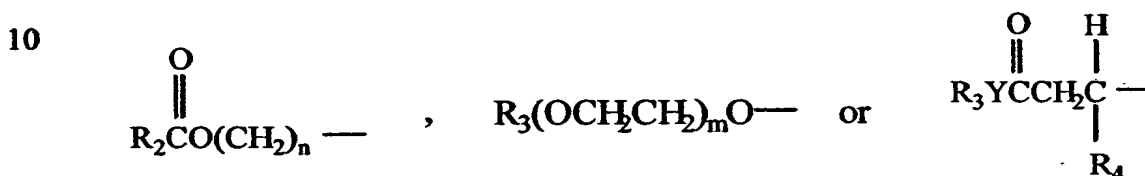
Y = O or NH.

- 13 14. A method of inhibiting the capacitation of sperm cells, said method comprising the steps of contacting the sperm cells with a composition comprising a compound of the general formula:



wherein X is P or S;

R is C<sub>4</sub>-C<sub>24</sub> alkyl, C<sub>4</sub>-C<sub>24</sub> alkenyl, C<sub>4</sub>-C<sub>24</sub> alkoxy,



R<sub>1</sub> is H, C<sub>1</sub>-C<sub>4</sub> alkyl, a pharmaceutically acceptable cation or



wherein L is 4 to 24;

R<sub>5</sub> is H, C<sub>1</sub>-C<sub>4</sub> alkyl, phenyl or a pharmaceutically acceptable cation,

R<sub>2</sub> is C<sub>4</sub>-C<sub>24</sub> alkyl or C<sub>4</sub>-C<sub>24</sub> alkoxy, n is 0 to 4;

R<sub>3</sub> is C<sub>4</sub>-C<sub>24</sub> alkyl, m is 3 to 10;

20 R<sub>4</sub> is H, C<sub>1</sub>-C<sub>4</sub> alkyl or COOR<sub>6</sub>;

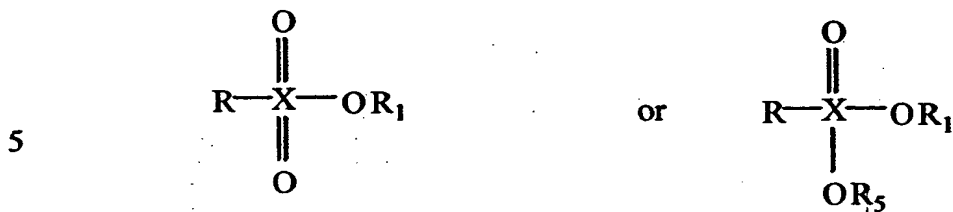
R<sub>6</sub> is C<sub>1</sub>-C<sub>13</sub> alkyl; and

Y = O or NH and a pharmaceutically acceptable carrier.

- 16 15. The method of claim 14 wherein the step of contacting the sperm cells  
25 with the compound occurs *in vivo* in the male.

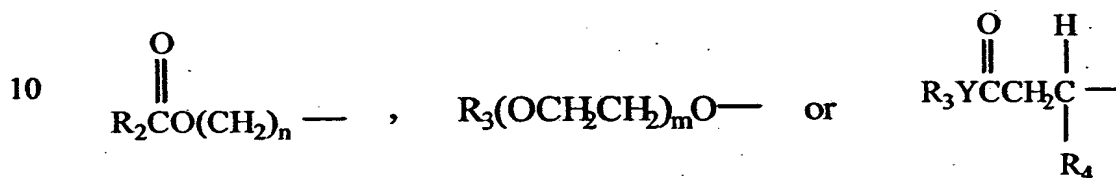
- 17 16. A method for inhibiting conception, comprising

administering to a male an effective amount of a pharmaceutically acceptable cationic salt of a compound of the general formula:

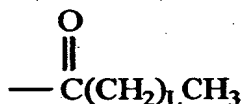


wherein X is P or S;

R is C<sub>4</sub>-C<sub>24</sub> alkyl, C<sub>4</sub>-C<sub>24</sub> alkenyl, C<sub>4</sub>-C<sub>24</sub> alkoxy,



R<sub>1</sub> is H, C<sub>1</sub>-C<sub>4</sub> alkyl, a pharmaceutically acceptable cation or



15

wherein L is 4 to 24;

R<sub>5</sub> is H, C<sub>1</sub>-C<sub>4</sub> alkyl, phenyl or a pharmaceutically acceptable cation,

R<sub>2</sub> is C<sub>4</sub>-C<sub>24</sub> alkyl or C<sub>4</sub>-C<sub>24</sub> alkoxy, n is 0 to 4;

R<sub>3</sub> is C<sub>4</sub>-C<sub>24</sub> alkyl, m is 3 to 10;

20 R<sub>4</sub> is H, C<sub>1</sub>-C<sub>4</sub> alkyl or COOR<sub>6</sub>;

R<sub>6</sub> is C<sub>1</sub>-C<sub>13</sub> alkyl;

Y = O or NH.

14 17. The method of claim 16 wherein the composition is administered  
25 orally in a daily dosage form.

19 18. The method of claim 16 wherein the composition is administered transdermally or subcutaneously to maintain constant systemic levels for an extended time period.

10022671.121701